

Highlights

- Specifically designed for molten glass measurement
- Wide temperature range 750°C – 1675°C
- High accuracy $\pm 3^\circ\text{C}$ absolute
- High optical resolution 100:1
- Fast response time down to 10 ms, adjustable
- Fiber optic assembly withstands 200°C, IP65 rated, optional up to 315°C
- 0/4 - 20 mA analog output
- RS485 serial output; networkable (up to 32 sensors)
- Advanced signal processing: Peak Hold, Valley Hold, Average
- Background radiation compensation
- Internal LED display and Marathon user interface
- Programmable relay output: dual temperature setpoints and failsafe alarm
- DataTemp® Software for remote configuration

Electrical Specifications

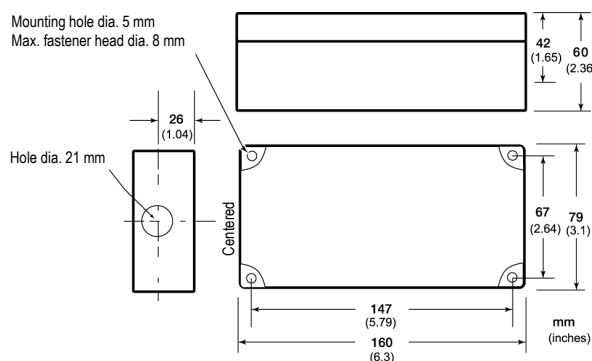
| | |
|---------------------|---|
| Outputs | 0/4-20 mA; RS-485, 2-wire or 4-wire, networkable to 32 sensors Relay, 48 V, 300 mA, response time < 2 ms |
| Power Supply | 24 VDC $\pm 20\%$, 500 mA |

General Specifications

| | |
|-------------------------------|---|
| Environmental Rating | IP65 (IEC529) |
| Ambient Temperature | |
| Optical head | 0 to 315 °C |
| Fiber cable | 0 to 200 °C, optional up to 315 °C |
| Electronics housing | 0 to 50 °C, with cooling platform up to 150 °C |
| Storage Temperature | |
| Electronics housing | -20 to 70 °C |
| Relative Humidity | 10 to 95%, non-condensing |
| Shock | |
| Electronics housing | IEC 68-2-27 |
| Vibration | |
| Electronics housing | IEC 68-2-6 |
| Weight | |
| Optical head | 100 g |
| Electronics housing | 710 g |
| Fiber Cable Protection | rated to 200 °C (optional up to 315 °C), stainless steel armour, Viton coated, IP65, provision for conduit to protect fiber cable |

Dimensions

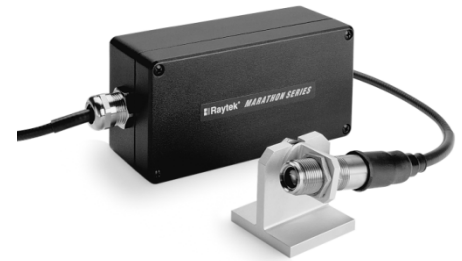
Electronics Housing



Raytek Marathon Series

FA1G

Datasheet



Measurement Specifications

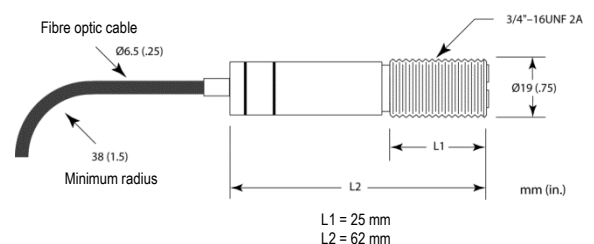
| | |
|-------------------------------|-----------------------------------|
| Temperature Range | 750 to 1675 °C |
| Spectral Response | 0,7 – 1,2 μm |
| System Accuracy | $\pm 3^\circ\text{C}$ |
| Repeatability | $\pm 1^\circ\text{C}$ |
| Temperature Resolution | |
| Current output | $\pm 0,01^\circ\text{C}$ |
| Display and RS485 | $\pm 1^\circ\text{C}$ |
| Response Time | 10 ms (95%), selectable to 10 s |
| Emissivity | 0,10 to 1,00 in 0,01 increments |
| Signal Processing | Peak hold, valley hold, averaging |

Optical Specifications

| | |
|---|----------|
| Optical Resolution D : S¹ | |
| FA1G | 100 : 1 |
| Focus Distance | |
| Standard Focus | ∞ |

¹ at 95% energy, D: Distance between sensor and object, S: diameter of spot size

Optical Head



Accessories

The models include a mounting nut, adjustable mounting bracket, an operator's manual and the Marathon DataTemp Software. Additional accessories are available:

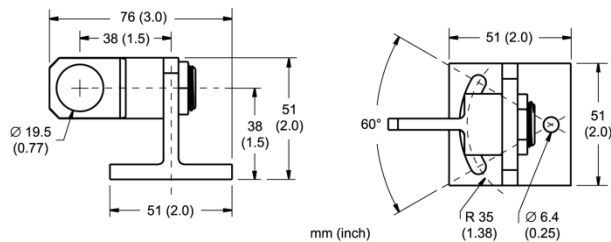
- Furnace rooftop mounting/purging system available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)
- Stainless steel air-purge collar for optical head with integrated stainless steel sighting tube (XXXFOHAPA), air flow 0,5 – 1,5 l per second
- 24 VDC / 1,3 A power supply with universal 100 / 240 VAC input (XXXSYSPS)
- USB/RS485 converter (XXXUSB485)
- Aiming-light (battery powered) for fiber optic front end including adapter to FA fiber cable (XXXFAFAL)
- Fiber-optic sighting tube conduit accessory. Sighting tube 300mm long with 32mm diameter with connection to standard electrical conduit (XXXFOSTCA)
- Terminal block (XXXMATB)
- Terminal block with 24 VDC power supply and IP 65 enclosure (RAYMAPB)

Options

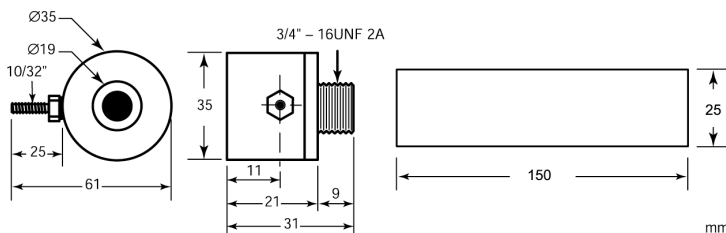
Options must be specified at time of order.

- Fiber optic cable lengths: 1, 3, 6, or 10 m
- ISO Calibration Certificate, based on NIST/DAkkS certified probes (XXXFACERT)
- Electronics Housing Cooling Platform (...W) water flow 2 l per minute, 16 °C for efficient cooling
- 12-pin DIN quick disconnect connector on electronics box (...C)
- High Temperature Fiber Cable (...H), rated to 315°C, option excludes Viton coating and IP65 rating

Adjustable Bracket (XXXFOMB)



Air Purge Collar (XXXFOHAPA)



Furnace rooftop mounting/purging system
available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)